

REMARKS/ARGUMENTS

Basis of rejections

Claims 1-3, 6-11, 13-15, 17-18, 20-21, and 25 were rejected under 35 USC § 102(b) as being anticipated by Bax et al (US Patent No. 5,313,666) (“Bax”).

Claims 1-4, 6-11, 13-18, 20-21, and 25 were rejected under 35 USC § 102(b) as being anticipated by Rempel et al (US Patent No. 6,367,496) (“Rempel”).

Preliminary matters

Concerning the Examiner’s position that:

“With respect to the limitations to the core and the method of usage thereof, the elected invention is to the covers only and the limitations to the cover fully met by the reference above”

Applicant respectfully disagrees. The Examiner has failed to provide any precedent to support the position that merely making an election in response to a restriction requirement changes the nature and character of the express claim language of the elected group of claims in such a way as to vitiate limitations specifically identified in the claims.

As to the arguments infra concerning anticipation, the law of anticipation requires that all the literal limitations in the prosecuted claim(s) must be found in a single prior art reference. Applicant will demonstrate that limitations in the present claims, interpreted in the most literal sense, are lacking in the cited prior art references. In so doing, Applicant is not restricting the scope of the claim limitations under the Doctrine of Equivalents.

The Doctrine of Equivalents deals with insubstantial changes to the claim limitations that

issue as part of a patent, while the arguments infra address only the issue of literal interpretations of the prosecuted claims.

Synopsis of response

Rempel does not disclose the limitation of the affixing member being attached to the first segment as identified in the claims of the present invention.

As to the cited prior art references, Applicant contends the limitations found in the claims of the present invention when understood in light of the specification are far removed from the elements identified in the prior art.

Claim 1 – affixing members (Rempel patent)

The Examiner contends that Rempel discloses a first segment (46) and affixing members (36). However, these limitations do not correspond to the limitations in Claim 1 of the present application. Rempel states:

“The frame 20 supports a cover 46.” Rempel, column 2, starting at line 43.

This situation is clearly shown in Fig. 4 from Rempel below:

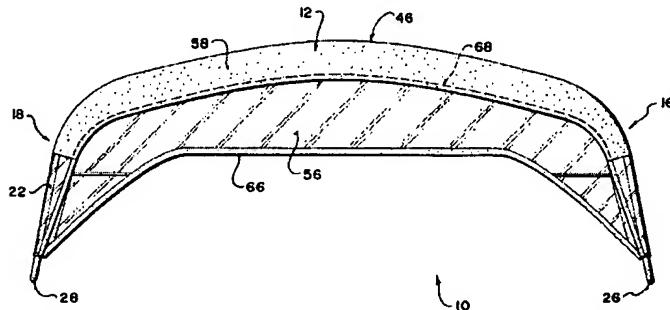


FIG. 4

The Examiner contends that Rempel also has an affixing member (36). In Rempel, this is referred to as struts. In particular:

“The top, center section of each arch is a truss structure 30. The main tube of the arch forms the upper chord 32 of this truss. A lower chord 34 is spaced below the upper chord and joins it adjacent the opposite ends. A series of struts 36 join the two chords.” Rempel, column 2, starting at line 30.

The relationship of Rempel’s struts (36) to the chord (32) is clearly identified in Fig. 9 from Rempel below:

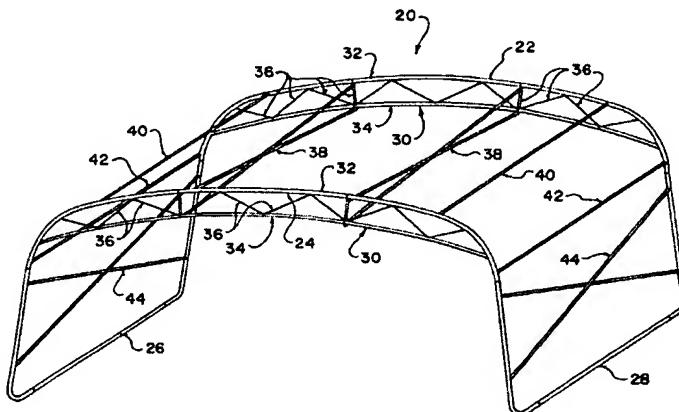


FIG. 9

It is important to note that the struts (36) never come into contact with the cover (46). Rather, the struts (36) come into contact with the cords (32). Claim 1 of the present invention, in part, directly links the affixing member to the first segment (that would be a direct link between the cover and the struts not taught in Rempel):

“a first segment having a longitudinal axis, an interior surface, and having **an arcuate exterior surface** perpendicular to the length of the longitudinal axis, the arcuate exterior surface of the first segment being adapted to provide protection to the inflatable shell from unwanted contact

with the core during the pre-deployed configuration and the arcuate exterior surface having at least one affixing member for cooperating with at least one affixing member on the interior surface of the inflatable shell such that the arcuate exterior surface is removably attached to the interior surface of the inflatable shell during the deployed configuration;”
(Emphasis added)

Rempel cannot anticipate as the limitation of the affixing member being attached to the first segment as this limitation is not disclosed in Rempel. While the limitation affixing member being attached to the first segment encompasses equivalents under the Doctrine of Equivalents, for the purposes of addressing the literal existence of this limitation in the prior art, Rempel does not disclose the literal reading of the claim limitation. Applicant contends the rejection of Claim 1 is overcome.

Claim 1 – attachment elements (Bax patent)

At the outset it is important to realize that anticipation is determined by “identify[ing] the elements of the claims, determin[ing] the meaning in light of the specification and prosecution history, and identify[ing] corresponding elements disclosed in the allegedly anticipating reference.” Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 1458 (Fed.Cir. 1984). The claim limitations cannot be viewed n a vacuum and compared to the prior art in that fashion.

Claim 1 states in part:

“a plurality of attachment elements disposed on the ribs adapted to cooperate with the attachment elements on the longeron”

The term “adapted to” can create a limitation in a claim. See MPEP § 2111.04
The central inquiry is whether the clause states a condition that is material to

patentability. *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 868 (Fed. Cir. 1985) (“adapted to” in a preamble found not to impart patentability) (overruled on other grounds). It is clear that the attachment elements on the ribs must be capable of cooperating with the attachment elements on the longeron thereby lending to patentability of the cover. If this were not the case, the remainder of the claim would make no sense:

“such that the cover is releasably attached to the core in the pre-deployed configuration.”

The cover could not be releasably attached to the core if the attachments on the ribs were not capable of cooperating with the attachments on the longeron. The specification supports this conclusion. The Summary of the Invention identifies:

“[0019] This invention is directed to a cover for a modular structure. The inflatable modular structure has a core with at least two longerons and an inflatable shell and the inflatable shell has an internal surface that generally encloses both the longerons and a plurality of covers. The core has a plurality of attachment elements cooperating with the covers such that each cover is releasably attached to the core in the pre-deployed configuration. In that configuration the inflatable shell is folded over, and secured to, the covers such that the covers provide a measure of protection for the shell so that the shell does not come into contact with the core. In the deployed configuration the inflatable shell is pumped up with air and the covers are released from the core and removably attached to a plurality of affixing members disposed on the inside surface of the inflatable shell such that the covers serve as a foundation for securing items in place.”

It is the cooperation of the attachment elements disposed on the core and the ribs that facilitates the releasability of the cover and thus an element of patentability.

Nothing in either Bax or Rempel address attachment elements on ribs cooperating with attachment elements on a longeron. Applicant contends that the rejection of Claim 1 is overcome.

Claim 1 – provide protection (Bax and Rempel patents)

Claim 1 also states in part that:

“the arcuate exterior surface of the first segment being adapted to provide protection to the inflatable shell from unwanted contact with the core during the pre-deployed configuration”

Again, the specification identifies that the surface of the first segment is used to protect the shell in the pre-deployed state:

[0047] FIG. 4 also depicts how the shell 132 can be folded over the covers 100. The number of folds depends upon a number of variables such as the thickness of the shell 132 and the overall dimensions of the structure. Once folded, the shell 132 can be secured in place by any number of convention means including, but not limited to, being tied with straps. The covers 100 insulate the shell 132 from coming into contact with the core including the longerons 118. The arched surface of the cover 104 provides a relatively smooth and supportive structure for the folded shell. When the shell 126 is folded over the covers 100 and secured into place, the inflatable modular structure would be in the pre-deployed configuration. In this configuration, the shell and core would be secured to fit into the payload section of a launch vehicle.

If the arcuate surface of the first segment was not fashioned to protect the shell, then a patentable element of the invention would be excised from the claim. Nothing in

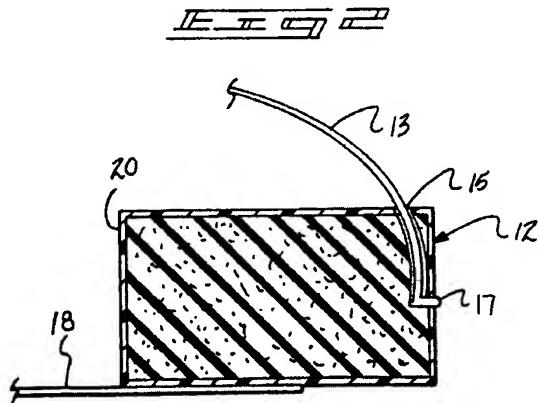
either Bax or Rempel addresses protecting the shell of a spacecraft. Applicant contends that the rejection of Claim 1 is overcome.

Claim 1 – affixing member (Bax patent)

Addressing the affixing member limitation of Claim 1, the Examiner contends that Bax discloses an affixing member (17). However, Bax refers to this element as a second shield pivot axel (17). As discussed in Bax:

“A first shield pivot axle dial 16 directed through an exterior side wall of the first support block 11 is arranged for pivotally mounting the shield relative to the first and second support blocks, with the second block pivotally mounted about a second shield pivot axle 17, as illustrated in FIG. 2.” Bax, column 3, starting at line 47.

Fig. 2 in Bax clearly identifies the pivoting function of the axel 17:



In the present invention, the affixing member bears no resemblance to the pivot in Bax. The present invention identifies:

[0049]FIG. 6a shows the interaction between an affixing member 136 attached to the internal surface 134 and an affixing member 138 on the arcuate surface 104 of the cover 100. The affixing member 138 on the arcuate surface is referred to as the first affixing member and the affixing member 136 on the internal surface is referred to as the second affixing member.

Fig. 6a of the present invention shows the relationship of the affixing member to “arcuate surface” shown below.

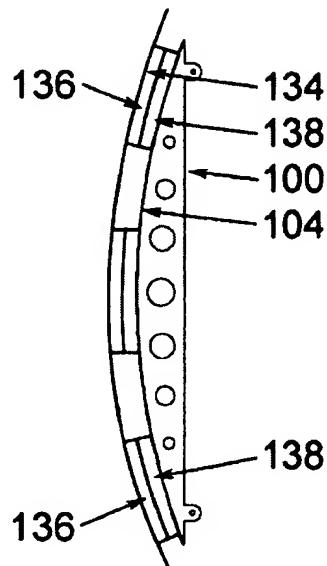


Fig 6a

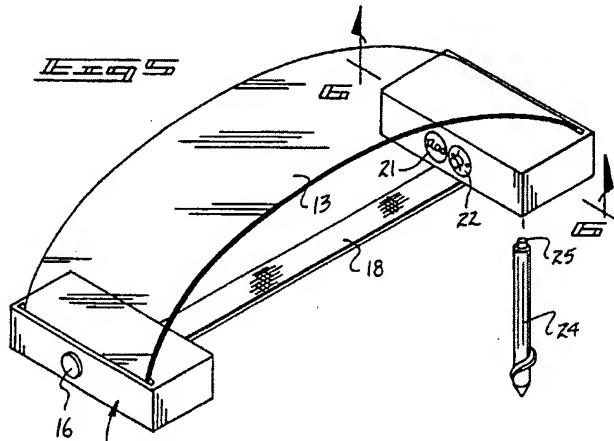
The affixing member of the present invention does not act as a pivoting axel as disclosed in Bax. In Bax, the ultraviolet shield web (13) can be pivoted about the axel

(17). In the present invention, the cover (100) is removably attached to internal surface of the flexible shell (134) via the affixing member (138).

Applicant respectfully contends that the rejection of Claim 1 is overcome.

Claim 2 (Bax patent)

Focusing on Claim 2, the Examiner contends that Bax discloses an attachment element (24). Fig. 5 of Bax is reproduced below:



This element is referred to in Bax as an anchor spike:

"The FIG. 5 illustrates the use of the anchor spikes 24 for use by the invention, wherein one is illustrated, it is understood that a plurality of such spikes can be utilized with each of the support blocks, wherein for purposes of illustration, only one such spike is indicated having an anchor spike upper shank tip 25 complementarily received within a tip receiving socket 26 through a bottom surface of an associated support block. The sockets 26 are orthogonally directed into the support block to properly

position the support blocks relative to one another when positioned upon a sand surface. It should be noted that a lower portion of the spike 24 is formed with an externally positioned thread to enhance mounting within an underlying beach surface if required.” Bax, column 4, starting at line 9.

This spike (24) is clearly detachable and adapted for insertion into a sandy soil. In contrast, the attachment element of the present invention works in conjunction with a longeron of a spacecraft:

“Turning to FIG. 1a, the longitudinal axis 112 is shown exemplifying how the arcuate exterior surface 104 is perpendicular to the axis 112. In FIG. 1b, attachment elements 114 are secured to the ribs 110. In the preferred embodiment, the attachment element is a plate with a hole. FIG. 1c shows an attachment element 114 on the rib 110 and a corresponding attachment element 116 disposed on a longeron 118. The longeron 118 attachment element 116 in the preferred embodiment is a pair of opposing plates with holes that receive the rib 110 attachment element 114. In this configuration, attachment element 114 is sandwiched between the plates of attachment element 116. In this way, the holes align where a releasable pin 120 can be inserted through the holes to secure the cover 100 to the longeron 118.”

Fig. 1b of the present application depicts the attachment elements (114):

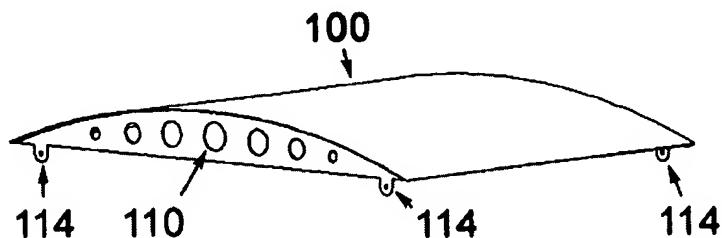


Fig 1b

The attachment elements of the present invention are directed to application with a spacecraft and not to use in the sand. Applicant contends the rejection of Claim 1 is respectfully overcome.

Claim 3 (Bax and Rempel patents)

Claim 3 states:

“The cover of claim 2 wherein the core further comprises at least two longerons and the cover has a width and each longerons having an outer edge and the width of the cover is substantially the distance between the outer edges of the longerons and the cover fits over the longerons.”

Claim 3 adds the extra limitation of Claim 2 of the cover having a particular width. That width is substantially the distance between the outer edges of the longerons. This limitation does not appear in Bax or Rempel.

Claim 4

Claim 4 was rejected entirely on the basis of Rempel. Claim 4 states:

“The cover of claim 2 wherein the second segment is substantially rigid.”

Claim 4 depends from Claim 2, which as demonstrated above, is not anticipated by Rempel. Applicant contends that Claim 4 is not anticipated.

Claim 6

Claim 6 states:

“The cover of claim 2 wherein the cover is substantially hollow.”

Claim 4 depends from Claim 2, which as demonstrated above, is not anticipated by either Bax or Rempel.

Claim 7

Claim 7 states:

“The cover of claim 2 wherein the first segment has an access opening.”

Nothing in either Bax nor Rempel discuss an access opening in the first segment. On this point alone Claim 7 is not anticipated. Further, Claim 7 depends from Claim 2, which as demonstrated above, is not anticipated by either Bax or Rempel.

Claim 8

Claim 8 states:

“The cover of claim 2 wherein the second segment has an access opening.”

Nothing in either Bax nor Rempel discuss an access opening in the second segment. On this point alone Claim 8 is not anticipated. Further, Claim 8 depends from Claim 2, which as demonstrated above, is not anticipated by either Bax or Rempel.

Claim 9

Claim 9 states in pertinent part:

“the attachment elements on the ribs cooperating with the attachment elements on the braces such that the cover is removably attached to the braces.”

As discussed supra, neither Bax nor Rempel address attachment elements on the ribs cooperating with the attachment elements on the braces. Further, if this limitation were discarded then the rest of the claim would be meaningless. The cover could not be “removably attached to the braces” unless the attachment elements cooperated. Applicant contends that the anticipation rejection as to Claim 9 is overcome.

Claim 10

Claim 10 states:

“The cover of claim 9 wherein the core further comprises at least two longerons and the cover has a width and each longeron having an outer edge and the width of the cover is substantially the distance between the outer edges of the longerons and the cover fits over the longerons.”

The fact that Claim 10 includes the additional limitation of a definite width of the cover that is not addressed in either Bax or Rempel precludes a finding of anticipation. Applicant contends that the anticipation rejection as to Claim 10 is overcome.

Claim 11

Claim 11 states:

“The cover of claim 9 wherein the second segment is substantially rigid.”

Claim 9 is not anticipated for the reasons given above. Applicant contends that the anticipation rejection as to Claim 11 is overcome.

Claim 13

Claim 13 states:

“The cover of claim 9 wherein the cover is substantially hollow.”

Applicant believes the rejection as to Claim 9 is overcome. As Claim 13 is dependent from claim 9, Claim 13 is also not anticipated. Applicant contends that the anticipation rejection as to Claim 13 is overcome.

Claim 14

Claim 14 states in pertinent part:

“the attachment elements on the ribs cooperating with the attachment elements on the longerons such that the cover is removably attached to the longerons.”

For the reasons discussed above in regards to the limitation of the cooperating attachment elements, Claim 14 is not anticipated. Applicant contends that the anticipation rejection as to Claim 14 is overcome.

Claim 15

Claim 15 states:

“The cover of claim 14 wherein the cover has a width and each longeron having an outer edge and the width of the cover is substantially the distance between the outer edges of the longerons.”

The express limitation of the cover having a width, “substantially the distance between the outer edges of the longerons” is not identified in Bax or Rempel. Therefore, Claim 15 is not anticipated. Applicant contends that the anticipation rejection as to Claim 14 is overcome.

Claim 16

Claim 16 states:

“The cover of claim 14 wherein the second segment is substantially rigid.”

Claim 16 is rejected only on the basis of Rempel. As discussed above, the cooperating attachment elements of Claim 14 are not identified in the prior art. Thus Claim 16 is not anticipated. Applicant contends that the anticipation rejection as to Claim 16 is overcome.

Claim 17

Claim 17 states:

“The cover of claim 14 wherein the first segment has an access opening.”

Neither Bax nor Rempel discuss the first segment having an access opening. Applicant contends that the anticipation rejection as to Claim 17 is overcome.

Claim 18

Claim 18 states:

“The cover of claim 14 wherein the second segment has an access opening.”

Neither Bax nor Rempel discuss the second segment having an access opening. Applicant contends that the anticipation rejection as to Claim 18 is overcome.

Claim 20

Claim 20 states:

The cover of claim 14 wherein the cover is substantially hollow.

Claim 14 is not anticipated as discussed supra. The additional limitation of Claim 20 is not found in Bax or Rempel. Applicant contends that the anticipation rejection as to Claim 18 is overcome.

Claim 21

Claim 21 states:

“a plurality of ribs disposed between, and joined to, the inner surface of the first segment and the substantially flat surface of the second segment

and the ribs having a plurality of attachment elements for cooperating with the attachment elements on the core.”

As discussed supra, the attachment elements on the ribs must be capable of cooperating with the attachment elements on the core. Nothing in Bax or Rempel anticipates this limitation.

Claim 25

Claim 25 states:

“A method of using a cover with a core of an inflatable modular structure having a plurality of attachment elements thereon and an inflatable shell which utilizes the cover of claim 2.”

Claim 25 is a method claim. As such, the core and shell are required to perform the method. As claim 25 is part of the elected group, it necessarily follows that a rejection as to any claim in the group on the basis that the limitations do not include an inflatable shell is untenable.

The law regarding anticipation

Statutory authority

35 USCS § 102

“A person shall be entitled to a patent unless--

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than

one year prior to the date of the application for patent in the United States,"

All the elements of an invention must be found in one reference.

In order for a claimed invention to be anticipated under 35 U.S.C. § 102, all of the elements of the claim must be found in one reference. *Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991). As shown supra, Rempel does not disclose the limitation of the affixing member being attached to the first segment as identified in the claims of the present invention. Further, the claim limitations cannot be analyzed in a vacuum. When viewed in relation to the specification, the limitations found in the claims of the present invention are far removed from the elements identified in the prior art.

The reference must place the invention in the possession of a person of skill in the art.

A reference anticipates a claim if it discloses the claimed invention such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention. *In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995), cert. denied, 116 S.Ct. 1362 (1996), quoting from *In re LeGrice*, 301 F.2d 929, 936, 133 USPQ 365, 372 (CCPA 1962). None of the cited references place a longeron cover as claimed in the present invention into the public domain. Neither Bax nor Rempel disclose any use as to a spacecraft. Neither reference contain any teaching that could lead to the present invention of a cover for use with the longerons of an inflatable spacecraft.

The subject matter encompassed by the claim must be identified

The inquiry as to whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the

reference. As set forth by the court in *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984), it is only necessary for the claims to "read on' something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or 'fully met' by it." The subject matter disclosed by the claims of the present invention are clearly directed to use in connection with a spacecraft. As discussed supra, the claim limitations as understood in light of the specification are not fully met by the prior art references cited.

Enablement

Prior art does not disclose an invention if the disclosure is not enabling. In re Donohue, 766 F.2d 531, 533 (Fed.Cir. 1985). A disclosure is non-enabling if it "does not place the subject matter of the claims within the possession of the public." In re Wilder, 429 F.2d 447, 451 (C.C.P.A. 1970)(quoting In re LeGrice, 301 F.2d 929, 939 (C.C.P.A. 1962)). Neither Bax or Rempel place a cover for use with the longeron of an inflatable spacecraft into the possession of the public. Bax deals with a face cover for sunbathing at the beach. Rempel deals with an enclosure for the back of a truck. Neither is enabling as to the cover of the present invention.

Appl. No.: 10/700,808
Amend. Dated: December 5, 2006
Reply to Office Action of November 6, 2006

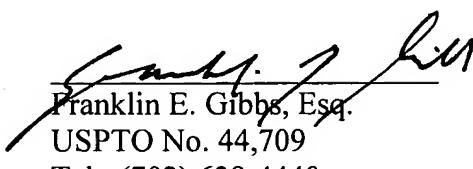
Conclusion

Applicant believes the application is now in a condition for allowance and Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

If the Applicant's attorney can be of any further assistance, please call the undersigned at the number provided.

Respectfully submitted,

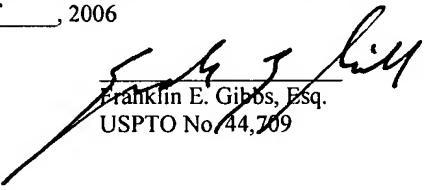
Dated: 12 - 5 - 06


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CERTIFICATE OF MAILING

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Dated: 12 - 5 - 06


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